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# Institutional complexity and sustainable development in the EU electricity sector

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# *CHAPTER 5*
# ON SUSTAINABILITY-RELATED INSTITUTIONAL COMPLEXITY AND STRATEGIC CHANGE: AN EXPLORATION OF THE SUSTAINABLE DEVELOPMENT LOGIC

## 5.1. INTRODUCTION

The integration of sustainable development (SD) in firms' practices has become a key subject in the management literature (e.g. Bansal, 2005; Gladwin et al., 1995; Jennings and Zandbergen, 1995; Kolk and Van Tulder, 2010; Scherer et al., 2013). Indeed, firms experience significant pressures from their stakeholders to simultaneously comply, through their practices, to economic, social and environmental sustainability principles (Bansal, 2005). While the corporate sustainability literature has mainly investigated 'win-win' situations, recent studies have put forward the importance of possible 'tensions' and/or tradeoffs (e.g. Hahn et al., 2010; Hahn et al., 2015; Pinkse and Kolk, 2010; Scherer et al., 2013; Van der Byl and Slawinski, 2015) between the different sustainability dimensions. Indeed, sustainable development is a multifaceted concept, encompassing a range of principles and practices which can at times be/seem incompatible. Especially in times of industry transformation and drastic "technological, socio-economic and regulatory changes" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486), acting in accordance with multiple SD-related demands can be particularly challenging for firms. For example, the reorganization of firms' activities can lead to compliance with one issue being inhibited by the fulfilment of another.

Although the literature on firms' responses to SD-related tensions is growing, limited attention has been given, on one side, to the conceptualization of the multiple SD beliefs and values firms face and embrace and, on the other side, to the dynamics and shifts in firms' adoption of these different SD principles during strategic change processes. Our study aims to help address this gap by adopting an institutional logics lens, which we see as having substantial potential for generating insights. We suggest that theory on 'institutional complexity', defined as "incompatible prescriptions from multiple institutional logics" (Greenwood et al., 2011: 318), could provide a relevant contribution to the understanding of responses to multiple SD-related demands, but that institutionalists have given scant attention to SD as a logic. We therefore firstly integrate the corporate sustainability and the institutional logics literature by conceptualizing a compound and multifaceted SD logic both in terms of 'beliefs' and 'material practices'. We then employ the SD logic concept to explore how firms

respond to SD-related institutional complexity during a strategic change process driven by environmental transformations.

In order to answer this question we conduct a 'process study' (Langley et al., 2013), adopting a deductive bottom-up theorizing (Shepherd and Sutcliffe, 2011) single case study research design, focusing on the German electric utility multinational E.ON. The EU electricity sector is particularly pertinent to answer our research question for two main reasons. First, in the last decades, the electricity sector has seen multiple critical institutional, economic and technological transformations (see chapter 3), which have radically changed prevailing business models. Second, electric firms have increasingly faced a multiplicity of SD-related demands (see chapter 2). While historically electric firms had to fulfil only security of supply and affordability goals, in recent years, as part of the external transformations, increasing relevance has been assigned to environmental sustainability in the EU electric organizational field. The introduction of this new principle and associated practices has created conflicts between the multiple SD-related objectives, which have made the adoption of appropriate responses particularly challenging for electric firms. E.ON is a case in point, and particularly interesting as it was established relatively recently as a separate entity (from a merger of two other firms), presenting a certain break with the preceding period while simultaneously exposing the complexities faced by a firm in this sector, and particularly in the dynamic German setting (e.g. with regard to nuclear energy decision-making, see chapter 4). The study adopts a longitudinal approach and uses data collected from the documentation released by E.ON from June 2000, the date of E.ON's foundation, to December 2015. This timeframe allows insights on the type of SD-related responses adopted by E.ON, showing whether and how they changed over time and the extent to which specific responses were viable.

This study aims to contribute to both the corporate sustainability and institutional logics literature, by also integrating them in a number of different ways. First, by conceptualizing a SD logic as a compound institutional logic we contribute to capturing the values, associated practices and complexity inherent in the nature of SD, which have up to now been partially addressed in the extant literature. Second, examining how a firm deals with multiple SD sub-logics, and with the complex relationships between them, allows light to be shed on dynamic and controversial features of corporate sustainability, which do not conform to the win-win paradigm that has been dominant in the field until recently. Third, through the longitudinal exploration of how a firm responds to SD-related institutional complexity, and the identification of shifts over time, we aim to advance knowledge of institutional complexity. Indeed, we show that firms do not always adopt a 'single' and 'sustainable' response to institutional complexity. Instead they can undertake different actions at the same time and certain

responses may be pertinent only in the short term and not viable in the long run. Fourth, by examining SD-related institutional complexity and firms' response to it while embedded in a turbulent environment, we integrate in both corporate sustainability and institutional complexity research a phenomenon to which firms have increasingly been subject. Scholars have mainly analysed how firms deal with SD and institutional complexity from either a rather 'static' perspective or by taking into consideration a more narrow environmental change. Yet companies have increasingly been dealing with multiple transformations which have disrupted their 'way of doing business' and it is in this context that they have had to address SD-related institutional complexity.

The following sections are organized as follows. First the relevant literature on SD and institutional logics will be addressed; then an integration of corporate sustainability and institutional complexity literature will be established and put in a context of environmental transformation. Subsequently the methods adopted for the study will be presented. Next, the findings will be explained and discussed, before the chapter concludes.

## 5.2. LITERATURE REVIEW

### 5.2.1. A Sustainable development logic

The concept of SD was promoted most prominently by the United Nations World Commission on Economic Development (WCED, 1987: 43), that defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The need to consider the environmental, social and economic dimensions, which constitute SD, has subsequently been widely supported, including by its articulation through the 'triple bottom line' and 'people, planet, profit' notions of 'sustainability' (Elkington, 1997; Kolk, 2010). SD has received growing attention in management and organization scholarship, and the related beliefs and material practices have been the focus of several studies (e.g. Bansal, 2005; Jennings and Zandbergen, 1995; Kolk and Van Tulder, 2010). Indeed, firms, originally unwilling to be responsible for anything other than their economic sustainability, have been urged to commit to a more comprehensive SD in light of their increasing societal relevance (Scherer et al., 2013). As a consequence, a growing number of firms has "adopted sustainability principles as part of their mission statement" (Scherer et al., 2013: 260). In conformity to SD values, firms have increasingly adopted '(corporate) sustainability practices', which are "actions that each company […] undertake[s …] to meet the fundamental principles of sustainability" (Sharma and Henriques, 2005: 160).

The relationship between SD and institutional logics has, however, not received significant attention to date, despite the increasing evidence of an emerging SD logic to firms' behaviour. The potential for a SD logic is reflected in the Friedland and Alford (1991: 248) definition of institutional logics as "a set of material practices and symbolic constructions which constitutes its organizing principles and which is available to organizations and individuals to elaborate". This SD logic is also supported by Thornton and Ocasio's (1999: 804) later conceptualization of logics as "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality".

The extant institutional logics literature has to date not identified a clear SD logic, instead reference has generally been made to the possible influence of 'resource environments' and ecological considerations (e.g. Thornton et al., 2012) and to environmental concerns influencing fields and/or organizations' practices (e.g. Herremans et al., 2009; Lounsbury, 2002; Zietsma and Lawrence, 2010). In their study on climate change, Ansari et al. (2013) discuss actors' underlying logics, but social sustainability and the environment are seen as part of a community logic, associated most clearly with non-governmental organizations (NGOs). This seems comparable to how Thornton et al. (2012) and Lee and Lounsbury (2015) relate social and environmental responsibility behaviours to specific localities, and one might, likewise, imagine ethical and sustainability aspects being included in a professional logic, or exercised by environmental professionals, for example. However, this seems a somewhat different 'level' of logics than we propose, which is a more 'comprehensive' SD logic encompassing beliefs and material practices. In our view, this adds a perspective that merits more significant attention than it has received to date.

Table 5.1 indicates the components of a SD logic, thus providing a first step towards a "specification of the content of logics, by the elements that make up those logics", as argued to be necessary more generally in research on logics by Logue and Hinings (2014: 13). As posited by Thornton et al. (2012: 54) "each of the institutional orders is composed of elemental categories or building blocks which represent the cultural symbols and material practices particular to that order". In keeping with this, the conceptualization of the SD logic contains an initial specification of the overall belief system, as conceptualized by the WCED in 1987. The last row of Table 5.1 illustrates material practices for the electric utility sector, aspects that will be further discussed and explained in sections 5.3 and 5.4.

While other institutional logics (e.g. the state, market, corporate, professional logics) have been conceptualized as having one coherent set of beliefs and associated

practices (Thornton et al., 2012), the SD logic is, in its essence, compound. Its conceptualization, therefore, also encompasses the presence of three SD sub-logics: environmental, social and economic sustainability.

| *Overall belief system* (WCED, 1987: 43; 67) | ***Sustainable development*** is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". "Two conditions must be satisfied before international economic exchanges can become beneficial for all involved. The sustainability of ecosystems on which the global economy depends must be guaranteed. And the economic partners much be satisfied that the basis of exchange is equitable". | | |
|---|---|---|---|
| *Dominant societal-level sustainable development logic* | ***Environmental sustainability*** | ***Social sustainability*** | ***Economic sustainability*** |
| *Sub-belief system* (Bansal, 2005: 198) | "Human activities [should] not erode the earth's land, air and water resources" | "All members of society [should] have equal access to resources and opportunities" | "A reasonable quality of life [should be promoted] through the productive capacity of organizations and individuals in society" |
| *Material practices* | Practices that control, reduce or prevent land, air and water pollution and that imply responsible resource exploitation | Practices that respect the rights of workers and communities, and that protect and help vulnerable members of society | Practices that provide employment, income and opportunities for personal development for individuals, and tax payments to society |
| *Illustrative electric utility sector material practices* | *Reducing $CO_2$ emissions, increase in energy produced through renewable energy sources, minimization of electric installations' impact on the landscape* | *Providing access to affordable electricity to all communities Excluding health damaging primary energy sources from electricity generation portfolio* | *Providing security of supply to both individual and corporate customers to enable productive activity* |

**Table 5.1:** Components of a sustainable development logic

Each sub-logic comprises a set of beliefs and material practices which are, at the same time, independent from and interdependent with those of the other SD sub-logics. Indeed, on one side, since each SD sub-logic has its own values and practices, an actor can adopt a specific SD sub-logic while neglecting the others. A SD sub-logic thus can be 'detached' from the others and embraced independently. For example,

management literature has explored the influence of stakeholders adopting the environmental SD sub-logic on firms' environmental commitment (e.g. Henriques and Sadorsky, 1999). Yet, on the other side, the three sub-logics are also interdependent, for three main reasons.

First, being subordinate to the overall belief system of the SD logic, they share the same set of overarching guiding principles. Moreover, for a firm to act sustainably, it is not sufficient to adopt only a sub-logic, but it has to address societal economic, environmental and social concerns, which need to be solved simultaneously (cf. Hahn et al., 2015). Finally, the excessive reliance on a specific SD sub-logic can be detrimental for the fulfilment of the others and, thus, to the adoption of a fully sustainable behaviour. This is due to the presence of tensions between SD concerns (Hahn et al., 2015), which, as discussed in the following section, have been increasingly emphasized by sustainability scholars.

### 5.2.2. Sustainable development-related institutional complexity

As stated in the previous section, in order to be deemed 'sustainable' a firm has to concurrently fulfil economic, social and environmental sustainability objectives. One relevant stream of literature on corporate sustainability has adopted a 'win-win paradigm' (Carroll and Shabana, 2010; Hahn et al., 2010), having as main focus the compatibility between SD issues. Yet, in the last decade, an increasing number of studies (e.g. Hahn et al., 2010; Hahn et al., 2015; Scherer et al., 2013) has contested this win-win framing of firms' commitment to SD, maintaining that, when addressing it, they are often confronted with significant challenges, which deserve to be investigated. Indeed, firms operate in increasingly 'complex and heterogeneous environments' and, as a consequence, they are often called to respond, at the same time, to a multiplicity of diverse SD-related demands (Scherer et al., 2013). Acknowledging this rising complexity, recently scholars have identified the existence of 'trade-offs' (Hahn et al., 2010; Pinkse and Kolk, 2010), 'tensions' (Hahn et al., 2015) and/or 'paradoxes' (Hahn et al., 2015; Van der Byl and Slawinski, 2015) between the different SD issues companies face. This signals that, as mentioned in the previous section, while the dimensions of a sustainable development logic are 'desirable in isolation', the attainment of one of the sustainability outcomes can compromise the fulfilment of another (Hahn et al., 2015).

The institutional logics theory provides a useful lens not only for the conceptualization of SD beliefs and values but also for the exploration of the interplays and dynamics between these SD principles firms encounter. Over the last decade, scholars (e.g. Dunn and Jones, 2010; Nigam and Ocasio, 2010; Reay and Hinings, 2009) have documented the enduring coexistence of multiple institutional logics, encompassing competing

beliefs and principles, in organizational fields, sectors and organizations (Greenwood et al., 2011). When organizations are exposed to "incompatible prescriptions from multiple institutional logics", they face 'institutional complexity' (Greenwood et al., 2011: 318). An increasingly relevant stream of literature has thus focused on investigating organizations' responses to institutional complexity (e.g. Greenwood et al., 2010; Greenwood et al., 2011; Purdy and Gray, 2009). Indeed, the way a firm responds to multiple conflicting logics is crucial, because it "can have major implications for social legitimacy and thus an organization's access to critical resources" (Greenwood et al., 2011: 319).

The institutional logics' lens can therefore be useful for exploring firms' changing responses to heterogeneous SD challenges over time. In particular, as argued by Greenwood et al. (2011: 318), "the pattern of institutional complexity experienced by organizations is never completely fixed and […] the nature of that complexity is fundamentally shaped by processes within organizational fields (Scott, 2008)". Firms therefore are not only called to manage institutional complexity once, but they have to do it continuously over time, often in the framework of environmental turbulence. As studies on SD-related tensions have given scant attention to longitudinal dynamics, literature on institutional complexity, encompassing change (e.g. Nigam and Ocasio, 2010; Purdy and Gray, 2009), offers an opportunity for the investigation of firms' responses to multiple SD-related demands over time.

The institutional complexity framework provides a contribution to the understanding of the SD-related tensions also in terms of their 'sources' (Greenwood et al., 2011). Indeed, as discussed previously, scholars have increasingly explored tensions between SD issues, but to date overlooked the sources of tensions and whether these reflect SD principles (i.e. 'the goals') or practices (i.e. 'the means') (Pache and Santos, 2010). Given the growing relevance of SD for firms' legitimacy, it is increasingly risky for companies to openly deny and contest SD principles and goals, such as the obligation to "not erode the earth's land, air and water resources" (Bansal, 2005: 198). On the other side, debates often emerge between firms and the other field's constituents regarding the material practices, i.e. the means, to adopt in order to comply with (different) SD values (see Table 5.1). Indeed, different sustainability principles may dictate incompatible behaviours or the firm and its stakeholders may translate'' (Greenwood et al., 2011) a specific SD principle into diverse practices. The institutional logics concept, encompassing both beliefs and material practices, as illustrated in the previous section, allows a deeper understanding of the kind of SD-related incompatibility a firm is experiencing and on what aspects it focuses its response on, whether it is about the 'goals or the means' (Greenwood et al., 2011).

### 5.2.3. External transformation, strategic change and sustainable development-related institutional complexity

The study of firms' responses to SD-related institutional complexity over time cannot be abstracted from the framework of strategic change and external transformations in which they are very often inscribed. Over the last decades, a wide range of sectors have faced "technological, socio-economic and regulatory changes" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486). This 'environmental dynamism' (Nadkarni and Chen, 2014) has been "restructuring industries, relocating their boundaries, and changing the bases of competition" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486). New practices have become increasingly legitimate and strategically appropriate while historically core practices have been forced into a gradual decline.

The cornerstone of strategic management literature is that firms facing critical environmental transformations need to respond to them through strategic changes, in order to compete and survive (Zajac et al., 2000; Zúñiga-Vicente and Vicente-Lorente, 2006). They thus have to engage in "either a redefinition of organizational mission or [in] a substantial shift in overall priorities and goals to reflect new emphases or direction" (Gioia et al., 1994: 364). This strategic change can be 'dramatic, and […] traumatic' (Gioia et al., 1994) and yet also gradual, due to path dependence and organizational inertia (Sydow et al., 2009).

Consistent with the view that the success of a strategic change process depends, as stated by Gioia et al. (1994: 363), on "the ability of stakeholders to understand and accept" it, extant literature has highlighted the 'sensemaking' dynamics related to strategic change (e.g. Gioia et al., 1994; Maitlis and Sonenshein, 2010). In the last years, the acceptance and legitimacy of a firm's strategy and strategic change has been increasingly rooted in its fit with multiple sustainable development-related requirements. A number of studies have investigated strategic change processes of an industry's incumbents, with a rising interest in strategic change in relation to sustainable development (e.g. Delmas et al., 2007). Yet, this stream of research has framed sustainable development mainly as a 'monolithic' construct and/or has explored only one of its fundamental principles (e.g. environmental sustainability), overlooking the complexity inherent in the concept.

We argue instead that transformations in the business environment may engender a 'short circuit' between a firm's strategy and its response to SD-related institutional complexity, which deserves further exploration. Two key trends, i.e. the increasing number of sustainability issues firms face in several industries and the rising speed and depth of strategic changes they have to adopt in order to survive (D'Aveni et al., 2010), signal the importance of examining how firms 'give sense' to their strategy and

strategic change in relation to of SD principles. Indeed, environmental transformations may drive strategic change entailing the growth of new practices that are consistent with one SD sub-logic but not or not yet with the other SD sub-logics the firm has to fulfil. Concurrently, strategic change may also include abandoning existing practices which were most suitable for the SD sub-logics the new practice is (still) not able to address. This change can be gradual, with the firm having to go through different stages both in terms of strategy and in terms of responses to SD-related institutional complexity.

Under these conditions of gradual strategic change and SD-related institutional complexity, it is thus particularly crucial for firms to manage SD sub-logics in a way that ensures acceptance of their existing or new 'way of doing business' in their institutional environment. In keeping with the conceptualization of the SD logic developed in the previous section, we argue therefore for the need to explore how a firm addresses SD-related institutional complexity during a process of strategic change due to critical environmental shifts.

## 5.3. METHODOLOGY

This research has been conducted by adopting a deductive bottom-up theorizing (Shepherd and Sutcliffe, 2011) single embedded case study design (Yin, 2003). The value of the focus on a single case study has been stressed in the literature arguing that "the focus on comparisons within the same organizational context" allows the "deep understanding of a particular social setting", "of the context in which events occur" and of the "underlying dynamics of the case", which is lacking in a multiple case study design (Dyer and Wilkins, 1991: 614-615). Indeed, the key rationale for conducting a single case study is that it is a longitudinal case (Yin, 2013), where the unit of analysis is studied at different points in time to investigate changes over time. As this is a 'process study' the use of longitudinal data is crucial to enable the desired "focus [of] attention on how and why things emerge, develop, grow and terminate over time" (Langley et al., 2013: 1). The development of a process study has been deemed "important and valuable for advancing management knowledge" (Langley et al., 2013: 1) and the potential of such unravelling of dynamics to lead to new theoretical insights also speaks to support for case study research designs in theory development (Eisenhardt, 1989).

### 5.3.1. Case selection

A theoretical sampling strategy (Eisenhardt, 1989, Eisenhardt and Graebner, 2007; Yin, 2003), drawing on three main arguments to justify the case selection, has been used to select the focal case firm E.ON, a German electric utility multinational.

First, the European and in particular the German electricity industry has over the last 15 years undergone a wide range of significant "technological, socio-economic and regulatory changes" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486), both related and unrelated to SD. Key technological transformations have been the digitalization of electricity supply, transmission and distribution, the development of technologies for distributed energy generation for energy management. In addition, socio-economic factors like the financial crisis, the rise in citizens' intention to become producers of electricity and their increasing concern for environmental sustainability have contributed to transforming the electricity sector. Crucial for this transformation have also been the changes in the regulations targeting the electricity sector. In particular, electric utilities have been confronted with the liberalization of the electricity industry, the launch of the EU Emission Trading Scheme (ETS), the creation of national support mechanisms for renewable energies and the withdrawal of a number of countries from nuclear energy (see chapter 4). All these transformations have substantially affected the structure of the European electricity industry in the last decade.

Second and related, the electricity sector has experienced increasingly stringent SD-related demands over recent decades (see chapter 2). Indeed, until the 1990s SD-related issues were either addressed through state-ownership and monopoly without too much debate, regarding concerns over security of supply and affordability, or had received limited and discontinuous attention, as in the case of climate protection (Kolk and Hoffmann, 2007). Since the 2000s instead, the concerns around the sustainability of electricity generation and distribution have risen. The World Energy Council's (2007) key policy statement, released in 2000 and entitled "Energy for Tomorrow's World – Acting Now", for example established three core goals for a sustainable energy future; namely the 3A's - accessibility, availability and acceptability. In particular, it maintained that "any energy strategy, policy or measure which fails to meet these 3A's will not be sustainable". The European Commission's (2000) Green Paper "Towards a European strategy for the security of energy supply" argues that the EU strategy should ensure "the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development".

The need for electricity supply to be concurrently economically, socially and environmentally sustainable has thus become a core requirement for electric firms. However, practitioners have acknowledged the challenges in reconciling the three SD-related objectives of energy security, energy equity and environmental sustainability, as epitomized by the expression "energy trilemma", introduced by the World Energy Council (2013) with reference to these three SD pillars (cf. Table 5.1). This complexity

characterising SD in the electricity sector thus makes the focus on an energy firm particularly suitable for the investigation of firms' responses to multiple SD sub-logics.

Third, E.ON is a firm relatively recently established as an independent corporate entity, as it was created in 2000 from the merger between two German firms, VEBA and VIAG, in anticipation of the emerging single European energy market (Kolk et al., 2014). E.ON is therefore a fairly young organization and has as a result of the merger inherited existing strategies and practices of the merging firms not suitable for the sustainability challenges of the 2000s. This allows the study to investigate longitudinally a firm which has been called to respond, from its very beginning, to the multiple SD-related demands, while being burdened by a considerable set of extant strategies and practices or, at least, less than other comparable firms such as RWE (Kolk et al., 2014).

### 5.3.2. Data collection

Data made publicly available by E.ON in its corporate website have been collected, with the aim of identifying and assessing the SD sub-logics adopted by E.ON and the practices associated to them. The data have been gathered from four types of sources: press releases published on the E.ON corporate website, letters to shareholders or stakeholders in E.ON Annual Reports and Sustainability Reports and, finally, E.ON CEO's speeches in the annual shareholder meetings. Table 5.2 shows both the number of items, i.e. number of press releases, speeches and letters, that have been collected and those that have been coded. The collected items comprise all the press releases, letters and speeches published on E.ON's corporate website.

Once collected, all the items were examined carefully to assess whether they included information relevant for the study, and thus had to be coded, or were to be discarded from the coding process. While for some sources, e.g. E.ON CEO's speeches, all the items collected displayed relevant information, for other sources, e.g. E.ON press releases, only a subset of items could be retained for the coding as they did not relate to the topic of our research.

The focus of our study is on understanding the institutional logics adopted by the firm and for this purpose the documentation developed by an actor for 'public consumption' is the most appropriate source (Reay and Hinings, 2005). Indeed, "such documents represent the end result of internal negotiations designed to portray a particular point of view, which […] is an excellent source of information about a key actor's institutional logic" (Reay and Hinings, 2005: 361). The documents collected covered the period from 16 June 2000, date of E.ON's founding, to 31 December 2015, with some exceptions, specified in Table 5.2, related to data availability.

| | | Number of items | |
|---|---|---|---|
| **Source** | **Period covered** | **Collected** | **Coded** |
| E.ON Press Releases | 2001-2015 | 527 | 179 |
| Letters to shareholders or stakeholders in E.ON Annual Reports | 2000-2014 | 15 | 14 |
| Letters to shareholders or stakeholders in E.ON Sustainability Reports | 2004-2014 | 11 | 11 |
| E.ON CEO's speeches in annual shareholder meetings | 2001-2015 | 15 | 15 |

**Table 5.2:** Overview of data collection

### 5.3.3. Data analysis

The objective of the data analysis in this study is threefold. First, it aims to examine the SD sub-logics adopted by E.ON and associated practices associated with each SD sub-logic by the company at a specific point in time. Second it intends to appraise the relationships the firm establishes between the SD logics and how it attempts to solve perceived conflicts between them. Third, it aims to assess whether and how the SD logics adopted, the associated practices and the relationships between SD sub-logics change during the sampled timeframe.

As regards the first two objectives, we have proceeded as follows. Although electric firms may address a wide range of SD-related issues, with different degrees of connection to the firm's core business, we decided to focus on the three sustainability issues that have been identified as most critical by both the World Energy Council and the European Commission (see section 5.3.1.): security of supply, affordability and environmental sustainability. Given the definition of SD sub-logics emerged from the literature review, we have associated the issue of security of supply with the economic sustainability logic, affordability with the social sustainability logic and environmental sustainability with its namesake logic. We have then identified a set of keywords associated with each SD sub-logic (see table 5.3), in order to select the relevant data to be coded using the software Atlas.ti. While some of the keywords have been identified before starting the data coding, others have been added during the coding as they emerged from the data and were then applied systematically to all the source material.

To fulfil the third objective, we developed a 'chronological list of events' (Garud and Rappa, 1994) with the coded data. More specifically, we have developed a qualitative database with each event, including the date, the SD sub-logic(s) adopted and the associated quote(s) from E.ON, listed in a chronological order. This has allowed the

examination of 'sequential patterns' (Pentland et al., 1999) in terms of changes and dynamics involving the SD sub-logics over time.

| Codes | Keywords |
|---|---|
| *Environmental sustainability logic* | $CO_2$ emissions, emissions, climate change, environmentally friendly, green, clean, environmental protection, climate protection, climate friendly |
| *Economic sustainability logic* | Security of supply, reliability/reliable, stability, flexible/flexibility, import dependence, to meet demand, balance supply and demand, reserve capacity, baseload capacity |
| *Social sustainability logic* | Energy affordability, cost*, wallet, cost-efficiency*, cost-effective(ness)*, electricity prices*, save energy* |

**Table 5.3:** Keywords related to each SD sub-logic
* only when used with reference to lower/higher affordability of electricity either in general or with reference to private customers

The main outcome has been the identification of three major periods: from one period to the other, E.ON's adoption of the SD sub-logics and the relationships established between them changed significantly. In the following section the findings will be illustrated by adopting the 'rich description' approach upheld by Dyer and Wilkins (1991), in keeping with the view that "in the domain of process theory stories are constructs" (Pentland et al., 1999: 711). As the findings draw on the narrative account, they do not reference all the individual sources (except for quotes) due to the large number of sources (cf. Kolk et al., 2014).

## 5.4. FINDINGS

Since its foundation and along the timeframe examined, E.ON's strategy and, concurrently, its responses to SD-related institutional complexity have encompassed two major shifts. In keeping with this, three main periods have been identified: period 1, from 2000 to 2005; period 2, from 2006 to 2014 and period 3, from end 2014 and still ongoing. Each period has been examined from four major perspectives: (1) the transformations in the external environment, (2) the strategies and strategic changes undertaken by E.ON, (3) E.ON's adoption of each of the three SD sub-logics and, finally, (4) the relationship established by E.ON between the three SD sub-logics. We will discuss these four perspectives for each of the three periods consecutively in respectively subsections 5.4.1 (2000-2005), 5.4.2 (2006-2014) and 5.4.3 (since late 2014). Table 5.4 provides an overview of key focus of the analysis in this chapter, i.e. the three SD logics and their interrelationships in the three periods identified, on which we will elaborate next.

| | Period 1 (2000-2005) | Period 2 (2006-2014) | Period 3 (end 2014-ongoing) |
|---|---|---|---|
| **Environmental SD logic** | Association mainly with conventional plants or without clear specification of the energy technologies.<br>Limited and ambiguous association with renewables | Association with conventional power plants and with renewable energy.<br>Association with new types of practices, e.g. distributed generation solutions where the customer's environmental sustainability is increased. | Focus of E.ON on the environmental SD logic.<br>Association with renewable energies and new practices, e.g. distributed generation solutions, where the customer's environmental sustainability is increased. |
| **Economic SD logic** | Main sustainability logic guiding E.ON's investment decisions.<br>Associated with conventional plants<br>Adopted also to delegitimize renewable energy sources | Association with conventional plants.<br>Initially adopted for new conventional plants.<br>Lately adopted to defend existing conventional plants. | Association with a new company, Uniper, which will be gradually divested. |
| **Social SD logic** | Adopted to delegitimize renewable energy sources. | Association with the need to reduce subsidies to renewables, with nuclear energy, with new types of practices. | Association with E.ON's new practices. |
| **Relationship between SD sub-logics** | Intention to fulfil all the three SD sub-logics although some statements prioritizing the economic SD logic.<br>Opposition to the EU and national regulators' association of specific energy technologies with the SD sub-logics.<br>Not all energy technologies may be suitable to fulfil the SD sub-logics. | Intention to fulfil all the three SD sub-logics through a broad energy mix<br>Commitment to increase compatibility of specific energy technologies with multiple SD logics.<br>Association of multiple SD sub-logics with new practices<br>Prioritization of SD sub-logics depending on the location | Separation of the practices fulfilling the environmental and the economic sustainability logics<br>Association of social and environmental SD sub-logic with new practices. |

**Table 5.4**: Overview of E.ON's adoption of SD sub-logics in the three periods

### 5.4.1. Period 1 (from 2000 to 2005)

#### *5.4.1.1. External environment*

As stated by E.ON's CEO in 2001, the electricity sector was in this period undergoing a process of "global liberalization and privatization" (E.ON, 2001a). In particular "the liberalization of the European energy markets marked a major turning point that led to radical changes" (E.ON, 2003). This has led to the falling of "borders between national energy markets" (E.ON, 2002a) and, as a consequence, a rise in competition but also the possibility to enter new markets. In addition, the EU and the national, in particular German, institutional fields went through a process of institutional change featured by the increasing relevance acquired by the environmental sustainability logic, in particular based on beliefs related to global warming as mainly caused by human practices. The institutional change process was associated with the design of regulatory measures at the EU level and at national level aimed at reducing $CO_2$ emissions and promoting cleaner energy technologies. Among others, key were the Renewable Energy Act approved in Germany in 2000 (BMWI.de, n.d.) and the ETS entered in force in the EU in 2005 (European Commission, 2013a). While the former was designed to incentivize the development of renewable energies, the latter consisted in setting a limit, reduced every year, to the $CO_2$ emissions that could be released by high-emitting sectors. "Within this limit, companies can buy and sell emission allowances as needed" (European Commission, 2013a). Another key shift in the electricity sector was the decision of the German government to abandon nuclear energy, due to German citizens' strong opposition to it; until that time it had been a fundamental component of the electricity generation mix in Germany. In 2000, the German government signed an agreement with the nuclear energy firms, including E.ON, for the gradual phase-out of nuclear energy plants, whose operational lifetime should not last more than 32 years (BBC, 2000).

#### *5.4.1.2. Strategy and strategic change*

Three main features characterized E.ON's strategy in the electricity business in period 1, which started with the formation of the company itself. First, E.ON (2001) aimed to maintain and expand its position as "'fully integrated utilit[y]' […] from generation through transmission to distribution and supply". Second, thanks to the global wave of liberalization, a key commitment of the company was international expansion; largely through acquisitions. In this period, E.ON acquired key electric utilities in Scandinavia, the UK, Central and Eastern Europe. Given the variety of the energy mix of the acquired firms, the acquisitions seem to have been driven more by their market power in a specific country than by the type of energy sources in their portfolio. Third, E.ON committed to considerable investments in 'fixed assets', i.e. in existing and new power

plants and in networks. As emerged from the investment plan for 2005-2007, released by E.ON in 2004, the main focus of these investments did not seem to be renewable energy installations. Out of 18,7 billion euros of total investments, and, more specifically, of 12,6 billion euros of investments in fixed assets, those in renewables counted for 1,1 billion euros.

*5.4.1.3. The three sustainable development logics*

Below we will discuss key features of the three SD logics in this period and, in subsection 5.4.1.4, their interrelationships. As supportive material, Table 5.5 provides some key illustrative quotes for each of them.

| | |
|---|---|
| ***Environmental sustainability logic*** | "for climate protection, nuclear energy is and will remain a necessity" (E.ON, 2001)<br>"Germany's ambitious climate-policy goals can only be reached by increasing the country's use of natural gas" (EON, 2002b)<br>"numerous scientific studies have demonstrated that, despite substantial subsidies, wind energy hardly reduces CO2 emissions" (E.ON, 2004a) |
| ***Economic sustainability logic*** | "we cannot build the future of our industrialized nation on a firm belief in the sun, the wind and biomass" (E.ON, 2003)<br>"the investment focus is on power generation and the expansion of the company's transmission and delivery network in order to continue to maintain a high level of supply security. Projects include the construction of a new coal-fired power plant and a new gas-fired power plant" (E.ON, 2004b) |
| ***Social sustainability logic*** | "Others suggested wind power and solar energy: All right, if you do not mind eating cold meals more often, whenever the wind does not blow or the sun does not shine. And when you are finally able to generate electricity, one kilowatt-hour will cost at least twice to four times what it costs today" (E.ON, 2003) |
| ***Relationships between SD sub-logics*** | "German energy politicians should pursue three equally important objectives with regard to our energy supply system: reliability, value for money and environmental soundness. These objectives of equal rank can be best achieved if governments - across Europe – define a consistent and uniform setting for all players, leaving enough room for the forces of the market and competition to find the most efficient solution." (E.ON, 2003) |

**Table 5.5:** Illustrative quotations related to E.ON's adoption of the SD sub-logics in period 1

Environmental sustainability logic:

During the first period of its existence, E.ON adopted the environmental sustainability logic. Yet, in most cases, the German firm either associated the environmental sustainability logic with power generation from conventional plants or it did not clearly specify the energy technologies connected to the logic. During the whole period 1, E.ON particularly emphasized the implementation of environmental protection measures to existing conventional power stations or the construction of

'environmentally friendly' conventional plants. More specifically, the analysis of E.ON's statements also shows that until 2002, the environmental sustainability logic was only connected to nuclear energy and natural gas. As regards the former, despite the agreement on nuclear energy's phase-out, E.ON (2001) maintained that, beside other reasons, "for climate protection, nuclear energy is and will remain a necessity". As regards the latter E.ON (2002b) argued, with respect to its intention to acquire the German gas company Ruhrgas, that "Germany's ambitious climate-policy goals can only be reached by increasing the country's use of natural gas". Also, referring to the investment plans of Powergen, its UK subsidiary, the CEO stated that the firm was "well positioned to reduce its $CO_2$ emissions by expanding its gas-fired generating operations" (E.ON, 2004a).

While the connection of conventional plants within an environmental sustainability logic was clearly established and defended, the logic's association with renewables was more limited and also more ambiguous. E.ON (2003) connected the environmental sustainability logic to the fact the firm was the "biggest generator of electricity from water power", of building biomass power stations and of "planning to build wind-farms off-shore". Nevertheless, interestingly, in the following year E.ON's CEO adopted the environmental sustainability logic, in his annual speech to the shareholders, to delegitimize wind energy, by positing that "numerous scientific studies have demonstrated that, despite substantial subsidies, wind energy hardly reduces $CO_2$ emissions" (E.ON, 2004a). Ambiguity also surrounded some of E.ON's announcements of the construction of new 'environmentally friendly' plants. While, as mentioned above, this was often accompanied by a specification of the type of plant planned to be built, in some cases a clarification on the energy source was not provided. Thus, in these cases uncertainty was left around the practice E.ON associated with the environmental logic.

The statements made by E.ON in this period signal that the German firm did not contest, at least officially, the adoption of environmental sustainability values for electricity generation. Instead, its response was particularly interesting regarding the 'means' to be associated with the environmental principles. On one side, E.ON clearly promoted and defended the role of conventional plants and existing energy technologies for the attainment of environmental objectives. On the other side, E.ON adopted an ambiguous position as regards the role played by new energy sources, i.e. renewables.

Economic sustainability logic:

In period 1, the economic sustainability logic was emphasized by E.ON as the main sustainability logic guiding its investment decisions. This focus emerged particularly

from the investment plans presented by the company in 2004 and 2005. Indeed, E.ON (2004b) stated that "the investment focus is on power generation and the expansion of the company's transmission and delivery network in order to continue to maintain a high level of supply security". Similarly, the investments planned for the following three years were argued by E.ON (2005a) to be "intended, above all, to reinforce security of supply in E.ON's markets". The investments associated by E.ON with this objective consisted mainly of coal and gas plants.

In this period, the economic sustainability logic was also the main logic adopted to delegitimize renewable energy sources. E.ON (2003) contested the government's support for wind and solar power by arguing that these energy sources "cannot safeguard our energy supply" and that "we cannot build the future of our industrialized nation on a firm belief in the sun, the wind and biomass". The risks for security of supply engendered by renewables were reiterated by E.ON in 2005. Interestingly, however, in the same year E.ON (2005b) also made an opposite statement, arguing that "renewable energies make an important contribution to secure and sustained energy supplies".

The statements made by E.ON with regards to the economic sustainability logic signal the priority given to this logic and its strong correspondence with, as material practice, power generation through conventional plants. The economic sustainability logic was also used by E.ON to delegitimize another material practice, electricity generation from renewables, despite some contradictory statements.

Social sustainability logic:

In period 1, the social sustainability logic was adopted by E.ON mainly to delegitimize renewable energy sources, i.e. wind and solar energy, and to defend the legitimacy of conventional energy sources, i.e. coal, oil, nuclear and gas. In particular, E.ON (2003) contested the German government's plan to reduce the use of fossil fuels in favour of renewables arguing that, if it was adopted, "one kilowatt-hour [would] cost at least twice to four times what it costs today". In keeping with this, E.ON (2003) questioned the financial incentives granted by the German government to renewable energies, warning that due to this "cornucopia of subsidies", consumers would have to pay substantially higher electricity bills.

#### *5.4.1.4. Relationships between SD sub-logics*

The previous section has shown E.ON's adoption of each of the three core SD sub-logics during period 1. In some cases, the company adopted the three SD sub-logics simultaneously. In particular, in 2002, E.ON (2002a) declared its contribution in "help[ing] provide reliable, competitive and environmentally sound energy supply for

the German economy", while in 2003, it stated that the German government "should pursue three equally important objectives with regard to our energy supply system: reliability, value for money and environmental soundness" (E.ON, 2003).

Another key trait of this period is E.ON's opposition to the EU and national regulators' association of specific material practices with the SD sub-logics. Indeed, in 2003 the CEO argued: "these objectives of equal rank [reliability, value for money and environmental soundness] can be best achieved if governments - across Europe – define a consistent and uniform setting for all players, leaving enough room for the forces of the market and competition to find the most efficient solution" (E.ON, 2003). The need to comply with more than one SD sub-logic, according to E.ON, should exclude the selection a priori of a specific practice by actors in the organizational field and it should leave the choice to electric firms to identify the material practices to adopt. In particular, E.ON's CEO saw the association by the government of specific practices with the environmental sustainability logic as detrimental for the fulfilment of the social sustainability logic. Indeed, in 2003, he argued that the economic support, assigned by the government to renewable energies for purposes of environmental protection, was causing an increase in energy costs for consumers. He, thus, called for the government to "define the general setting within which all energy sources can compete with each other and the most efficient solutions can be found in the interest of environmental protection" (E.ON, 2003).

Although, as illustrated previously, some of E.ON's statements suggests the equal standing of the environmental, social and economic sustainability logic, this seems to be contradicted by other statements which signal the priority given to the economic and/or the social sustainability logics over the environmental logic. In particular, E.ON CEO (2003) argued that "reliability of supply and environmental soundness also play an important role. However, anything that that is not cost-effective is ultimately not sustainable either". This highlights the primacy of an economic/social sustainability logic, epitomized by cost effectiveness, which seems to be related both to the electricity firms' costs and to the costs for customers in terms of energy prices, over the environmental sustainability logic. According to this statement, not being (sufficiently) cost-effective would justify the exclusion of an energy source, even if substantially greener, from the energy mix. Also E.ON's statements in this period stress the priority given to the economic sustainability logic and thus to security of supply in its investment decisions.

### 5.4.2. Period 2 (from 2006 to 2014)

*5.4.2.1. External environment*

In period 2, the European electricity sector entered a process of radical transformation. This was, to a large extent, driven by measures to reduce $CO_2$ emissions and support mechanisms for renewables, which were in many cases strengthened with respect to period 1. In particular, the EU Climate Package entered in force in 2009 set targets to cut $CO_2$ emissions by 20%, generate 20% of EU electricity from renewables and improve energy efficiency by 20%, all to be realized by 2020. Within this framework, the third phase of the EU ETS, started in 2013, entailed a tightening of the emission reduction measures for electric firms. This encompassed, significantly, the annual reduction of the cap on emissions from power plants and the allocation of all emission allowance for power generators through auctioning and not anymore for free.

In Germany the so-called 'Energiewende', i.e. 'energy transition', was officially launched in 2011 (see also chapter 4). The German government committed to it through a set of regulations and programs, fostering the shift from power generation based on conventional energy sources (coal, gas and nuclear) to one entirely reliant on renewables and integrating energy efficiency. This shift was mainly, but not exclusively, driven by an environmental sustainability logic.

According to E.ON (2013a), the incentives to promote renewables introduced by the German and other EU governments created the 'unmanaged' rise in renewable power. This uncontrolled growth, in turn, engendered a decrease in wholesale energy prices and the reduction in capacity utilization, and thus in profitability, of conventional, fossil-fueled power plants. The resulting crisis for conventional plants driven by the promotion of renewables was accelerated by the global economic crisis in the same years; the recession led to a reduction of electricity demand, which also contributed to overcapacity and to a further decline in wholesale energy prices. This had a significant impact on E.ON's conventional plants and, in particular, on its gas power stations, which, according to the company, became "largely uneconomic to operate" at the end of period 2 (E.ON, 2013a).

The crisis of conventional plants was also burdened by the rekindled aversion for nuclear energy, in particular in Germany, as illustrated in Chapter 4. In 2010, the German government had adopted a more positive stance regarding the existing nuclear plants, reaching a 'compromise' with the electric firms on the extension of their nuclear plants' operating lives. After the Fukushima disaster occurred in 2011, however, the opposition to nuclear energy which had never disappeared in the

country, regained strength. As a consequence, the German government decided to reverse its previous decision to extend nuclear plant operating lives, by imposing a faster phase-out of the national nuclear power plants.

E.ON, however, acknowledged that the transformation of the electricity sector was more radical than a shift in energy sources. What was occurring to the electricity sector was, according to E.ON (2013b), the dissolution of "the traditional distinction between generation, transmission, distribution and consumption". Thanks to the rise in the number of renewable energy installations and to the emergence of smart grids, customers could now decide "whether they want to buy energy from the grid or make it themselves and perhaps even market it to others" (E.ON, 2013b) and "decentralised energy production will play a substantial part in the transformation of energy supply in Germany" (E.ON, 2011c).

*5.4.2.2. Strategy and strategic change*

Period 2 is characterized by E.ON's intention to have a broad energy generation portfolio, comprising both renewables and conventional energy sources, which had been E.ON's core business since its foundation. During this period, E.ON increasingly invested in the growth of its renewable energy business, with the aim of gaining a "leading international position" (E.ON, 2007a). This emerged from different actions adopted by E.ON. First the company increasingly invested in the construction of wind and, later, solar power plants in a number of countries. Different from period 1, where only one billion euros was allocated to renewables, in 2007 E.ON allocated 3 billion euros for the period 2007-2010, and in 2008 it decided to double this sum. In 2009 E.ON stated that it was investing 8 billion euros for the period 2007-2011. Second, in 2007 it created a new unit, called "E.ON Climate and Renewables", which would be "responsible for steering and developing E.ON's renewable energy business, and for managing projects in the field of climate protection" (E.ON, 2007b). Third, E.ON made key acquisitions and alliances in the field renewables. Among others, it acquired Energi E2 Renovables Ibericas, which was Dong Energy's Spanish and Portuguese renewables business, and the North American activities of Irish wind farm operator Airtricity. Also, with another company, Schüco International, E.ON created a joint venture for producing thin-film solar modules.

As regards conventional energy sources, E.ON's statements in period 2 signal the firm's intention to keep them in its energy generation portfolio. Yet, the maintenance of conventional plants was increasingly challenged over the years by the ongoing changes in the external environment (see section 4.2.1.). In keeping with this trend, two main approaches can be identified. In the first part of period 2, E.ON adopted a rather 'offensive' approach by engaging in building new coal, gas and nuclear plants

mainly in Europe (besides those in Russia). For example, it joined projects to build nuclear power stations in the UK and Finland, it committed to build coal plants in Germany and the UK and gas plants in Hungary, Germany and Slovakia. Between 2007 and 2008 it also acquired mainly conventional plants in France, Spain and Italy. In the last years of period 2 instead, E.ON adopted a rather 'defensive' approach: the announcements of new conventional plants were substantially reduced and the focus was on defending the existing installations and their profitability. In particular, E.ON's engagement in building new gas- and coal-fired capacity was increasingly restricted to new non-European markets, i.e. Russia, Turkey and Brazil. In the EU, E.ON, either individually or together with other major electric utilities, engaged in fighting against the phase-out of nuclear plants decided by the German government and in requesting support mechanisms to keep in operation profitably its coal and gas plants. Where the challenges could not be overcome, E.ON decided the closure of some conventional power stations, e.g. the one of a gas plant in Slovakia, or the withdrawal from the construction of new plants, as in the case of nuclear plants in the UK and Finland.

E.ON (2013c) increasingly committed to growing its distributed generation and energy-efficiency business in period 2, consistent with its intention to transform itself "from being a traditional integrated utility toward becoming a developer of customer-centric energy solutions". It started installing micro generation units both for private and business customers and in 2013 it created E.ON Connecting Energies, a unit focusing on energy efficiency and on-site energy generation for businesses and public sector institutions. This was also accompanied by acquisitions and alliances in the field of distributed generation and energy management.

*5.4.2.3. Sustainable development logics*

Analogous to the set-up for the previous period, we will below discuss the key features of the three SD logics for 2006-2014 and, in subsection 5.4.2.4, their interrelationships. As supportive material, Table 5.6 provides some key illustrative quotes for each of them.

The key common trait of period 2 is the commitment of E.ON to fulfil all three sustainable development logics through a broad range of practices, comprising electricity generation from conventional and renewable energy sources and, increasingly, energy services. Within this framework, however over the years some changes emerged in the approach adopted by E.ON. These changes, which yet did not delineate clearly distinct (sub-)periods, arose around 2010-2012 and are highlighted in the discussion.

| | |
|---|---|
| ***Environmental sustainability logic*** | "Our wide energy mix, which is aimed at reducing carbon emissions and conserving resources, has put us on the right track" (E.ON, 2010a)<br>"E.ON has inaugurated a new gas and steam power plant with an installed capacity of 561 megawatts in Irsching, Bavaria. The Ulrich Hartmann power plant achieves an efficiency level of over 60 percent, which has never been seen before in plants of this type, and is hence setting new standards for efficient and environmentally-friendly electricity production". (E.ON, 2011d)<br>"Investments of EUR7 billion in renewables, three large wind farms in the North Sea and Baltic Sea, and new transmission lines for wind power: they are all ways Johannes Teyssen is making E.ON a green energy provider" (E.ON, 2011e)<br>"Athlon Car Lease Germany and E.ON will work together to offer e-mobility solutions …. Their solutions will make it possible for customers … to operate a zero-emission, climate-friendly fleet". (E.ON, 2010b)<br>"Distributed generation of energy reduces the load on transmission grids, makes companies more independent and is better for the environment, thus constituting a key element in Germany's energy turnaround. We will therefore continue to expand distributed generation in a consistent manner". (E.ON, 2012b) |
| ***Economic sustainability logic*** | "Germany, could face an electricity shortage if not enough fossil-fuel-fired generating units […] are built" (E.ON, 2008a)<br>"Highly efficient and flexible to use, CCGT plants are continuously increasing in importance in E.ON's energy mix. They are particularly suited to speedily and flexibly balancing out load fluctuations in the grid which arise from the increasing, but non-predictable, feeding-in of wind and solar energy". (E.ON, 2011f) |
| ***Social sustainability logic*** | "Particularly in the current crisis, nuclear power is a strategic option for German energy policy, one that will help avoid … price increases" (E.ON, 2008a) |
| ***Relationships between SD sub-logics*** | "E.ON is therefore committed to a broad range of energy technologies that help to ensure a climate-friendly, reliable and affordable energy supply" (E.ON, 2010c)<br>"Europe's main priority is to make its energy supply more efficient and climate friendlier. But other parts of the world still have a lot of catching up to do in terms of expanding their generation capacity". (E.ON, 2010d) |

**Table 5.6:** Illustrative quotations related to E.ON's adoption of the SD sub-logics in period 2

Environmental sustainability logic:

A key aspect differentiating period 2 from period 1 was the increased association of E.ON's practices with the environmental sustainability logic. This higher attention to environmental sustainability was epitomized by the slogan launched in 2011 for E.ON's new corporate strategy, i.e. 'cleaner and better energy'. Also, climate protection was increasingly argued by E.ON (2007c) to be "an integral part of [its] corporate values and strategy". Beside wider strategic directions, the environmental sustainability logic was adopted by E.ON, in this period, to justify and support its specific investment

decisions. In particular, E.ON used the environmental sustainability logic to back and defend the adoption of a 'wide energy mix'; the German company upheld the view that both renewables and conventional plants were needed to attain climate protection objectives.

A key aspect characterizing period 2 is the strong association of the environmental sustainability logic with E.ON's investments in renewable energy sources. Different from the previous period, in which reference to renewables was more vague and ambiguous, starting in 2006 E.ON substantially intensified the announcement of concrete wind and, later, solar projects and connected them with climate protection objectives. This association was epitomized by the name and objective assigned to new subsidiary in 2007: 'Climate and Renewables'. E.ON stressed that the new renewable business was in keeping with E.ON's key objective: the company was "dedicated to taking a leading international role in climate protection in the future and [was] committed to supporting the EU target of generating at least 20 percent of primary energy from renewables by 2020" (E.ON, 2007d). The reduction of its carbon emissions in Europe was argued by E.ON to be largely driven by the considerable expansion of its renewable capacity.

In period 2, E.ON also associated the environmental sustainability logic with investments in its existing fossil fuel power plants or in the construction of new ones. In particular, E.ON expressed its commitment to make existing technologies and/or plants more 'ecological'. During this period E.ON announced the 'modernization' of its existing coal and gas plants, aimed at reducing their $CO_2$ emissions, and the construction of new 'climate-friendly' fossil fuel-fired power stations. The intention of "set[ting] new standards in […] global warming management" (E.ON, 2006a) was presented as critical in the building of new coal plants. E.ON (2011e) supported the increase in the construction of CCGT plants arguing that they were "at the top of the table in their respective countries in terms of both efficiency and climate care". Beside the amelioration of existing technologies, E.ON also expressed its commitment to the development of new technologies for power generation from conventional power plants, e.g. carbon capture and storage (CCS). Indeed, according to E.ON (2007e), "carbon dioxide capture from power plants is one of the key technologies in tackling the global climate change problem". E.ON raised the association of the environmental sustainability logic with conventional power stations even when facing contestations on their construction, as in the case of the new coal plant to be built in Datteln, Germany. Referring to this plant, E.ON (2010e) contended that "this one major project [would] make the single biggest contribution to the emission-reduction target for power generation in the German state of North Rhine-Westphalia".

Since 2012, however, some changes in the association of conventional plants with the environmental sustainability logic have been detected. Indeed, in the last years of period 2, E.ON did not employ the environmental sustainability logic to justify new investments in coal- or gas-fired power generation in Europe anymore, but only in some cases to defend and protect the ones already made.

Until 2011, E.ON also adopted the environmental sustainability logic to defend nuclear energy. With reference to the phase-out of nuclear energy in Germany, before the Fukushima disaster, E.ON (2007f) posited that "there is no climate-neutral replacement for nuclear power" and that "each year nuclear energy prevents 150 million metric tons of $CO_2$ from being released in the atmosphere". Comparing the situation in Germany with the one in other countries (i.e. UK, Finland, Romania, and Bulgaria), where E.ON was involved in nuclear projects, the German company argued that "these countries [were] very interested in expanding nuclear energy because they believe[d] it [would] make an important contribution […] especially to climate protection" (E.ON, 2007f). The association of nuclear energy with the environmental sustainability logic was reiterated a few weeks after the Fukushima disaster. In the shareholder meeting held in May 2011, E.ON's CEO stated that "[f]or a considerable time to come, our nuclear power stations […] will also be part of any solution for Germany to have a[n] […] environmentally friendly […] energy supply" (E.ON, 2011a). However, after this statement, E.ON abandoned the association of the environmental sustainability logic with nuclear energy, despite still having nuclear plants in operation in Germany.

Since 2010, E.ON increasingly associated the environmental sustainability logic not only with investments in power plants but also with those in new types of practices encompassing distributed generation and e-mobility. The connection between these new practices and the environmental sustainability logic is particularly interesting because, while in E.ON's historically core activity of power generation the company argued to reduce its own $CO_2$ emissions, the supply of distributed generation and energy efficiency solutions were stated to help its customers reduce their $CO_2$ emissions. For example E.ON argued that the supply of CHP generation technology to private customers, a business pursued by the company in this period, was 'beneficial for the environment' and crucial for climate protection.

Economic sustainability logic:

During period 2, E.ON argued the economic sustainability logic to be a key logic driving its decisions. This emerges particularly from E.ON's investment decisions between 2006 and 2011. Indeed, E.ON (2006b) posited that "securing energy supplies [was] central to E.ON's strategy" and that, out of the 25.3 billion of investments planned for

the following three years, 22.4 billion would be focused "on investment in fixed assets, in particular to help further improve security of supply in E.ON's markets" (E.ON, 2006c). After 2011 however economic sustainability was related to new investment decisions only for Brazil and Russia, while in Europe it was only associated with existing power stations to emphasize their importance in the energy mix.

Similarly to the environmental sustainability logic, according to E.ON (2010c) the economic sustainability logic also justified the adoption of a "broad range of energy technologies". In particular, this was supported by the "global competition for oil and natural gas" (E.ON, 2006b), the need to "minimize [the] import dependence" (E.ON, 2008b) and to "generate 70-75% from non-renewable sources" (E.ON, 2008c).

Within this broad mix, conventional power plants, i.e. coal and gas plants, would "continue to have to bear the brunt of energy supply for a very long time to come" (E.ON, 2006d). Removing coal from the energy mix was deemed as "illusory and irresponsible" (E.ON, 2008b) as Germany would "face an electricity shortage if not enough fossil-fuel-fired generating units […] [would be] built" (E.ON, 2008a). E.ON used this argument in particular with regards to Datteln plant, the contested new coal power station planned to be built in Germany. Until 2011 the economic sustainability logic was employed by E.ON in relation to investments in new conventional plants. In relation to the objective of ensuring security of supply, in 2010 and 2011 flexibility was emphasized as key feature in the construction of new fossil-fuel plants. For example, referring to a new gas plant built in Slovakia, E.ON (2011f) underlined that it could "be utilized very flexibly and [could] thus balance any load fluctuations in the grid reliably and quickly"; a similar statement was made for a new gas plant built in Germany. Since 2012 economic sustainability was instead adopted by E.ON to defend existing conventional plants threatened by environmental transformations rather than to introduce new power stations. For example E.ON (2014a) asked "why the impression remains widespread that only a few conventional power plants are needed […]. The fact is, on overcast, windless winter days renewables produce almost no power. At such times almost all of Germany's conventional power plants have to spring into action". The exception was Russia where economic sustainability was still associated with new conventional generation assets built or to be built by E.ON.

Beside fossil fuel plants, during the whole of period 2 E.ON defended nuclear energy based on the economic sustainability logic, in particular in Germany, where, as illustrated previously, the phase-out debate was intense even before the Fukushima disaster. E.ON (2008a) supported the need to maintain nuclear power stations in operation as nuclear energy was 'reliable' and it would "help avoid shortages in the German electricity market". As mentioned in the previous section, E.ON (2007f) also

raised, from an economic sustainability perspective, the case of the UK, Finland, Romania and Bulgaria, which supported nuclear projects because "they believe[d] it [would] make an important contribution to security of supply". Similarly to the environmental sustainability logic, the economic sustainability logic was also associated by E.ON to nuclear energy in the aftermath of the Fukushima disaster: "for a considerable time to come, our nuclear power stations […] will also be part of any solution for Germany to have a secure […] energy supply" (E.ON, 2011a). This was reiterated in 2014, when E.ON announced the closure ahead of schedule of the Grafenrheinfeld nuclear plant. The company related this to the nuclear fuel tax imposed by the German government which, by creating a financial burden over nuclear energy, was forcing "a reliable, operationally flexible technology" (E.ON, 2014a) to be abandoned.

The strong association of fossil fuel and nuclear plants with the economic sustainability logic was justified by E.ON (2008b) in particular with the argument that "wind, solar and biomass won't be enough". While, in period 1, E.ON largely discarded renewables based on an economic sustainability logic, in period 2, it acknowledged and even promoted their positioning in the energy mix. Yet, E.ON (2013b) also argued that renewable energies needed to be supported by "stable, reliable conventional assets", due to their intermittency and to the fact that their generation capacity would cover only 30% of Germany's energy needs. Interestingly, although the fluctuations in wind and solar power supply were repeatedly argued by E.ON to be a key drawback from an economic sustainability perspective, in 2013 E.ON (2013d) made reference to renewables as ensuring security of supply, arguing that its "technologically advanced wind fleet [was] one of the most profitable in the industry and, with an availability factor of 98 percent, [was] a reliable component of Europe's energy supply".

Social sustainability logic:

E.ON adopted the social sustainability logic in period 2, but to a more limited extent than the other two sustainability logics. The involvement of social sustainability objectives was not always clearly formulated by the company. Reference was often made to 'competitiveness' or to 'cost effectiveness' without always specifying whether this referred to the energy prices for the customers or to the costs for electric utilities. Except for a set of imprecise statements, the social sustainability logic was clearly raised by E.ON in three main situations during period 2.

First, E.ON adopted the social sustainability logic when it demanded changes to the renewable energy subsidies granted by the German government and to the prices of emission allowances in the framework of the EU ETS. In particular, according to E.ON the incentives for renewables were too costly and represented a considerable burden

for electricity customers. Similarly, E.ON warned that the prices of the emission allowances were too high, which would have a negative impact on electricity prices in the EU. Second, E.ON adopted the social sustainability logic to support the use of conventional plants. In particular, it associated the logic to nuclear energy, which, according to the German company, would "help avoid […] price increases" (E.ON, 2008a). This was also emphasized after the Fukushima disaster, as epitomized by the CEO's statement during the 2011 shareholder meeting: "for a considerable time to come, our nuclear power stations […] will also be part of any solution for Germany to have a[n] […] affordable energy supply" (E.ON, 2011a). Interestingly and finally, at the end of period 2, E.ON linked the reduction of energy costs for private customers to the provision of unusual services for an electric utility. Indeed E.ON presented its provision of smart grids, energy saving services as contributing to energy savings for them.

*5.4.2.4. Relationships between SD sub-logics*

A key feature of period 2 is E.ON's acknowledgement of and support for the concurrent adoption of all the three sustainability logics. Indeed, in 2008 the CEO stated: "we are aware that maintaining the security of energy supplies is today no longer enough to deliver what is expected from us. We need to find convincing answers to new pressing issues such as climate change and the global rise in energy prices" (E.ON, 2008d). In the following years E.ON (2010c) reiterated its commitment "to ensure a climate-friendly, reliable and affordable energy supply" but blamed German and EU regulators of not assigning equal importance to the three sustainability logics. Accusing the regulators of a "lack [of] holistic energy strategy", E.ON (2009a) contended that they "sometimes [put] energy prices […] at the top of the agenda, sometimes climate protection and sometimes security of supply".

E.ON's support for the equal standing of the three sustainability logics was complemented by the appraisal of their divergence. In the presentation of the 2009 'CR Report', E.ON (2009b) emphasized the "conflict[ing] objectives [it was] facing when striking the balance between climate protection, security of supply and competitive prices". Within this framework, the concurrent adoption of the three sustainability logics was pursued by E.ON in different ways.

First, E.ON supported the adoption of multiple energy generation technologies for multiple sustainability logics. Indeed, the German company repeatedly argued that , the adoption of a 'broad energy mix' was necessary, in order to address the three sustainability logics. This was based on the view that all energy generation technologies had advantages and disadvantages, thus having an inclusive approach would allow to balance them and to attain multiple sustainability objectives. The promotion of a 'broad energy mix' was particularly meaningful for controversial energy

sources, i.e. coal and nuclear, which different actors urged to abandon. According to E.ON (2011a), nuclear and fossil-fuels "for a considerable time to come […] will also be part of any solution for Germany to have a secure, environmentally friendly and affordable energy supply". Interestingly, this statement was made less than two months after the Fukushima disaster. The role of conventional plants was, according to E.ON (2009a), to complement renewable energies which "protect the earth's climate but […] are not yet reliable enough to plan their output as part of the power supply".

E.ON also emphasized the relevant complementarity between coal and nuclear. The German utility acknowledged that, given that the development of a carbon-free coal plant is a medium/long term project, "we will have to live with high $CO_2$ emissions from coal-based electricity generation for a long time" (E.ON, 2006d). According to E.ON (2006d), maintaining coal plants in operation would "only be acceptable from a global warming perspective if at the same time the impact of these emissions is offset by the use of nuclear power plants", as nuclear energy was both reliable and carbon-free.

Second, E.ON expressed its commitment to make specific energy technologies more compatible with multiple logics. This is particularly the case of fossil-fuel fired power plants. Defending the need to maintain coal-fired power stations to ensure security of supply, E.ON (2009a) stated its engagement "to make coal technology more ecological". This objective, as mentioned above, was implemented through the improvement of the existing coal technologies and the investment in a new one, CCS.

Third, E.ON started associating multiple sustainability logics with new practices, unusually for an electric utility. Indeed, while originally an electric utility was engaged (almost) exclusively in generating and/or distributing electricity, with the transformation of the electricity sector customers started managing their own electricity generation and consumption. In period 2, thus, in keeping with the industry transformation, E.ON increasingly invested in the offer of energy services and it associated them with multiple sustainability logics. For example, according to E.ON (2010e), its "retail products […] help [its] customers shrink their energy bills and their carbon footprint".

Fourth, E.ON illustrated some attempts to prioritize sustainability logics depending on the location. Indeed, in the presentation of its investment plans in 2010, E.ON's CEO noted that "Europe's main priority is to make its energy supply more efficient and climate friendlier. But other parts of the world still have a lot of catching up to do in terms of expanding their generation capacity" (E.ON, 2010d). In keeping with this view, the CEO expressed the intention to invest in two new regions, later identified as Brazil and Turkey, where E.ON would "focus exclusively on offering solutions that

significantly improve the energy supplies in these regions" (E.ON, 2010d). With regards to its investments in Brazil, E.ON's emphasized the commitment to "enhance Brazil's security of supply" (E.ON, 2013e) and to address the country's "supply shortages" (E.ON, 2014a).

Beside the statements supporting the equal standing of the three sustainability logics, it can be noted that the priority attributed to the economic sustainability logic in period 1 diminished over the years, with the raise in importance of the environmental sustainability logic as co-driver of E.ON's investment decisions.

### 5.4.3. Period 3 (late 2014-ongoing)

#### *5.4.3.1. External environment*

In the period started in late 2014 the transformation of the electricity sector, or "revolution of the energy world" in the words of E.ON (2015a), has continued in the direction traced in the previous periods. The capacity utilization of conventional plants and wholesale power prices has continued to decrease, while renewables have kept growing even without subsidies. Also, similarly to what was already stated in the previous period, "how and where energy is produced, how it's transported and used – all of this is undergoing fundamental change" (E.ON, 2015a). Interestingly, E.ON (2015a) posited that "these changes go far beyond that which policymakers in Germany and elsewhere intended by the Energiewende". According to E.ON (2015a), the transformation of the electricity sector was not only driven by new regulations, but also, decisively, by "technological advances and [by] the needs and desires of customers that have been awakened by these advances". It acknowledged that this technological change, and in particular the rising 'digitalization' have given the customer a central role in the energy system. E.ON described the creation of two radically different "energy worlds", driven by the transformation of the energy sector. One world comprises "renewables, smart grids and customer-specific solutions", which are going to become the core of the electricity sector, while the other is "the conventional world of large assets and systems" (E.ON, 2015a).

#### *5.4.3.2. Strategy and strategic change*

Period 3 started with a major change in E.ON's corporate strategy, which was implemented in the subsequent two years. As argued by E.ON (2015b), "strategic renewal will be E.ON's dominant theme in 2015". Due to the ongoing environmental transformation and in particular due to "altered global energy markets, technical innovation, and more diverse customer expectations", it was decided that E.ON (2014b) would focus on "renewables, distribution networks, and customer solutions".

The commitment of E.ON in period 3 was concentrated in the expansion of its renewable energy and distributed generation businesses, and the growth in the offer of power solutions through partnerships and investment in start-ups. The other activities that the company was engaged in until that time, i.e. "conventional generation, global energy trading, and exploration and production businesses" (E.ON, 2014b), except nuclear energy generation, would be pooled in a new, independent company created in 2016 and called Uniper, which would be gradually divested. While initially it was announced that "Uniper [would] also be responsible for [the] nuclear generation fleet]" (E.ON, 2015c), subsequently this decision was reversed. It would be the 'new' E.ON which would "retain responsibility for the remaining operation and dismantling of [the] nuclear generating capacity in Germany" (E.ON, 2015d), through "a separate, Hanover-based operating unit called 'Preussen Elektra'" (E.ON, 2015d). Interestingly, in the statement announcing this new decision, the company posited that the responsibility for nuclear plants would "not affect E.ON's strategic transformation" as it had "ceased to view its nuclear power business as a strategic asset" (E.ON, 2015d).

*5.4.3.3. Sustainable development logics*

As before, we will also indicate key features of the three SD logics and, in subsection 5.4.2.4, their interrelationships, as far as possible for this relatively short period, accompanied by illustrative quotes in Table 5.7.

| | |
|---|---|
| ***Environmental sustainability logic*** | "Sustainability is an indispensable aspect of the future E.ON's corporate identity. This company will do everything it can - like accelerating renewables growth to enhance climate protection and making grids smarter - to promote the transformation of the energy system. […] Distributed energy solutions will enable our customers to do their part to move toward a low-carbon future." (E.ON, 2015c) |
| ***Economic sustainability logic*** | "In 2016 we intend to combine our businesses in the conventional energy world - conventional power generation, global energy trading, and exploration and production - into a new, independent, publicly listed company. Uniper will play an important role in ensuring supply security during the transformation of the energy system." (E.ON, 2015c) |
| ***Social sustainability logic*** | "Providing easily accessible information about the total cost (purchase price and cost of use) […] empowers consumers to take better decisions" (E.ON, 2015e) |
| ***Relationships between SD sub-logics*** | "E.ON is acquiring a stake in the US start-up Enervee. Founded in 2012, Enervee provides a dynamic platform on which consumers can make more energy-efficient choices when it comes to household appliances, devices and electronics. […] the Enervee Score […] is then combined with other data such as popularity and reviews, enabling consumers to better and more easily choose the products that are best for the home, their wallet and the environment." (E.ON, 2015e) |

**Table 5.7:** Illustrative quotations related to E.ON's adoption of the SD sub-logics in period 3

Environmental sustainability logic:

As mentioned above, period 3 started with the split of E.ON in two companies: one gathered renewables and distributed generation (the continuation of E.ON), while the other (Uniper) brought together the "activities in the conventional energy world" and would be gradually separated from E.ON's new core business (E.ON, 2015f). The mission of the new 'E.ON' was described as focused on complying with the environmental sustainability logic. Indeed, it would engage in "accelerating renewables growth to enhance climate protection", in developing smart grids in order to support renewables' growth, and in offering "distributed energy solutions [which] will enable our customers to do their part to move toward a low carbon future" (E.ON, 2015c).

E.ON's statements in this period associated the environmental sustainability logic with the construction of wind plants and the supply of distributed generation and energy efficiency solutions to business, public and private customers. Similarly to period 2, the supply of distributed generation and energy efficiency solutions was argued by E.ON not to reduce its own $CO_2$ emissions but to help its customers reduce theirs. In addition, E.ON (2015c) expressed its agreement with the European Commission and European Parliament's decision to reduce the number of emission allowances issued in order "to support the price of carbon". The environmental sustainability logic was also adopted, although to a very limited extent, with regards to Uniper. As Uniper had coal plants in its portfolio, a key challenge and commitment of Uniper was argued to be the reduction of the emissions released by these plants.

Economic sustainability logic:

Despite the acknowledgement of a transformation towards an energy system based on renewables and distributed generation, E.ON (2015b) continued to support the need for maintaining conventional power plants in operation "for decades", in order to ensure the reliability of energy supply. E.ON (2015a) argued that, based on an economic sustainability logic, "the production of fossil fuels, fossil-fueled energy generation, the companies that operate in these industries, the knowledge and abilities of their employees: none of that is passé". Concurrently, E.ON emphasized that the operation of conventional plants had become uneconomic due to the rise of renewables. The economic sustainability argument was thus adopted by E.ON (2015a) to call for the German government's support to fossil-fueled power plants which would "inevitably be necessary in the years ahead".

E.ON contended the lasting importance of Uniper, the new company combining the conventional energy generation businesses, based on economic sustainability reasons. This relied on the consideration that "an energy system based entirely on renewables – with no backup from conventional sources – will remain an utopia for a long time to

come" (E.ON, 2015a). As argued by E.ON (2014c), Uniper would thus "play a key role in ensuring security of supply and in providing backup for the transformation of energy systems in Europe".

Although E.ON also stresses the relevance of the economic sustainability logic in period 3, it has to be noted that the statements focusing on it make reference only to the practices of Uniper, an independent company which is bound to be separated from E.ON in time. This might suggest that E.ON has renounced developing practices that are associated with the economic sustainability logic.

Social sustainability logic:

The social sustainability logic is in this period associated not to E.ON power generation practices but to the 'solutions' it offers to its private customers. The energy efficiency platform in which E.ON has invested in 2015, is argued to provide information about the energy efficiency of the products private users employ, "enabling consumers to better and more easily choose products that are best for…their wallet" (E.ON, 2015e). E.ON thus aims to make energy more affordable by offering services which increase energy efficiency and not anymore by supplying electricity at lower prices.

#### *5.4.3.4. Relationships between SD sub-logics*

The equal standing of the three SD sub-logics and their concurrent adoption, which were dominant in period 2, was lost in period 3. E.ON addresses the environmental and economic sustainability logics separately: while E.ON's practices are focused on the former, Uniper's are concentrated on fulfilling the latter.

However, an innovative relationship, which emerged gradually in period 2, seems to have been established in period 3: E.ON associates both the environmental and social sustainability logics with the supply of distributed generation and energy efficiency solutions to its private customers. Its investment in an energy efficiency platform, mentioned in the previous sections, aims to enable "consumers to better and more easily choose products that are best for…their wallet and the environment" (E.ON, 2015e). Interestingly, in this period no association was made between nuclear energy and any SD sub-logic. This is likely to be related to the fact that, in this period, E.ON did not consider nuclear energy as a strategic asset anymore (E.ON, 2015d).

## 5.5. DISCUSSION

This study aimed to contribute insights into how firms respond to SD-related institutional complexity during a strategic change process driven by significant shifts in their business environment. In order to answer the research question we constructed

the concept of SD logic, conceptualized as a compound logic composed by the environmental, social and economic sustainability sub-logics. The SD logic concept has been subsequently employed to explore the responses to SD-related institutional complexity of a German electric utility, E.ON, over a period of 15 years following its creation. In particular, we analysed whether and how E.ON addressed each SD sub-logic both in terms of values and in terms of practices and what relationship, if any, the company established between the three logics over time.

The findings of the longitudinal case study show a process of change which, in E.ON's case, consisted of three main stages as regards the type of response to SD-related institutional complexity. The responses change over time in terms of both the beliefs and values adopted and mobilized, and the practices supported and implemented, as further discussed below. Key features are also summarized in Table 5.8, divided into the external transformational "technological, socio-economic and regulatory changes" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486), firms' strategic changes and their responses to SD-related institutional complexity, as also identified in the preceding findings section and its separate subsections. Although the stages here overlap with the time periods, this is not a necessity (see section 5.6).

| | **Stage 1** | **Stage 2** | **Stage 3** |
|---|---|---|---|
| **External transformations** | Rise of a new SD sub-logic and associated new practices | Multiple unsettling environmental changes favourable for the growth of the new practices and challenging existing practices | Confirmation and strengthening of environmental transformation |
| **Strategic changes** | *Unchanged strategy*<br>Maintain and grow existing practices<br>Commit to a limited and uncertain extent with new practices | *Engagement in incremental strategic change*<br>Maintain, grow and, lastly, defend existing practices<br>Increase investments in the new practices<br>Initiate investing in other new more 'unconventional' ones | *Engagement in radical strategic change*<br>Business model innovation<br>Abandon existing practices<br>Focus on growth of the new practices and of the more unconventional ones |
| **Responses to SD-related institutional complexity** | *(Officially) support* contingent associations of practices with multiple SD sub-logics<br>*Dissociate* new SD sub-logic(s) from new practices<br>*Oppose* existing SD logics to new practices<br>*Associate* existing and new SD logics with existing practices | *Integrate* new and existing practices in order to fulfil all SD logics<br>*Transform* existing practices to make them more consistent with the new SD logic<br>*Innovate* by associating multiple SD sub-logics with radically new types of practices.<br>*Diversify* by prioritizing different SD sub-logics depending on the location | *Compartmentalize* the activities, fulfilling the existing SD sub-logic(s) the company intends to abandon, in a new, separate, entity<br>*Exit* existing practices fulfilling the existing SD sub-logic(s)<br>*Focus* on practices fulfilling the new SD sub-logic(s) |

**Table 5.8:** Key components of firm responses to SD-related institutional complexity over time

### 5.5.1. First stage

Although signals of shifts are present, in particular with the rise in strength of a SD sub-logic and associated practices which are both new to the industry, the repercussions on the industry are still uncertain in a first stage. The firm's strategy remains substantially unchanged: it maintains as core investments those in existing practices, which in the field are seen as inconsistent with the new SD sub-logic, with very limited and uncertain commitment to the new practices.

This strategic behaviour finds correspondence in the firm's responses to SD-related institutional complexity. A type of response may be the (official) support for contingent associations between SD logics and practices. The firm acknowledges the need to respond to multiple SD-related values, yet it posits that the practices to accommodate them should not be prescribed a priori by the field constituents. Instead, firms have to be given the freedom to select practices that, depending on the circumstances, represent the most adequate compromise between the conflicting logics. The practices to adopt in order to fulfill the multiple conflicting SD-related values should thus be contingent upon the circumstances. This position officially in favour of an open-ended solution may however 'hide' an attempt of the company to obtain flexibility as regards the practices to adopt and thus to be able to maintain its existing practices.

Other responses may consist of dissociating and opposing. As it emerges from E.ON's case, a firm tends to not resist, at least explicitly, the SD logic's 'value basis' (Lee and Lounsbury, 2015), but rather opposes the new practices that in the institutional field are associated with it. The firm's responses therefore may consist of the attempt to, on one side, *dissociate the new practice from the new SD sub-logic* to which it is connected by actors in the field, and, on the other side, to *position the practice as in opposition with the values associated to the other SD logics*. An additional response may entail *associating existing and new SD sub-logics with existing practices*. With the aim of maintaining the legitimacy of its existing practices the firm may attempt to frame them as in keeping not only with the existing SD sub-logics but also, importantly, with the new one(s).

All the responses adopted in this stage by the firm have as common purpose the limitation of the most recent SD sub-logic's impact and the maintenance of the legitimacy of existing practices as compromise solution between conflicting logics. The firm does not defy the values related to the new SD logic and adopts a rather ambiguous approach regarding the adoption of the new practices, associated to the new SD logic by actors in the field. This response is consistent with extant literature which argues that incumbents tend, at least initially, to deny and 'resist' institutional

change in the organizational field. According to Kraatz and Block (2008: 250), "many organizations adapt to pluralism by trying to eliminate pluralism". Yet, extant institutional logics' literature has identified with resistance a general opposition to new logics, without making a distinction between defiance of 'goals' and of 'means'. This distinction proves particularly critical in the case of the SD logic, because openly defying field-level SD values, like those related to environmental sustainability, risks to be significantly detrimental for a firm's legitimacy. As a consequence firms may focus on limiting the diffusion of the practices associated in the field to the new SD logic.

### 5.5.2. Second stage

In a next stage, the environmental transformation becomes more apparent and unsettling and multiple forces, also but not only related to the new SD sub-logic, drive the growth of the new practices in the industry and the decline of existing ones. In this context, the firm starts a strategic change process which consists of maintaining and growing its existing practices and, concurrently, in investing increasingly in the new ones. In this framework the firm may undertake a set of different responses to address SD-related institutional complexity.

The first response consists of *integrating all SD logics and all (new and existing) practices* in its activity. The firm embraces all SD values, that it argues are equally relevant. Concurrently, the firm supports and adopts a 'broad' set of practices. All the practices that are associated with the SD sub-logics, even if only with a sub-set of them, are implemented and promoted. The firm justifies the adoption of a broad range of practices by arguing that, since each practice is likely to be consistent with a SD logic but to conflict with another, it allows the positive and negative effects to offset each other. This action thus encompasses the incorporation of conflicting logics and practices. Another response consists of *transforming the firm's existing practices* which are associated with an existing SD sub-logic but conflict with the new one, to make them more consistent with the latter. The objective is, in the short term, to reduce the contrast with the new SD sub-logic and, therefore to gain a higher acceptance in the field, and in the long term, to attain a full compatibility.

A third response entails the *development of innovative associations*. Consistent with the strategic change ongoing in this stage which drives the firm to adopt 'unconventional' practices compared to its core business, the company starts associating multiple SD sub-logics with these new and unusual practices. These innovative associations are particularly important as they allow the combination of SD sub-logics that could not be reconciled in existing practices. Finally, a fourth response consists in *diversifying SD logics and associated practices by prioritizing them depending on the field*. If in one field the focus is on the existing SD sub-logic with the

associated existing practices, in another field the new SD sub-logic and practices are argued to be dominant.

Although, as illustrated in the literature review, the institutional logics theory encompasses the changing nature of institutional complexity, "most empirical studies [on institutional complexity] assume or imply that organizations enact single and sustainable responses" (Greenwood et al., 2011: 351). This overlooks two key features emerging from E.ON's case. On one side, when confronted with multiple and conflicting institutional logics, firms are likely to not adopt only a 'single' response. Their response instead entails an heterogeneous set of actions to balance different institutional logics. On the other side, a firm's response to institutional complexity may is likely to not be sustainable over time in particular when firms experience much environmental turbulence. In this context, institutional complexity intersects with external transformations and a firm's response may not be viable due to legitimacy or strategic reasons.

Within the literature on corporate sustainability, in the last years, together with the acknowledgment of tensions between SD-related issues and demands, the view of the concurrent integration of all of them has been put forward (see e.g. Hahn et al., 2015; Scherer et al., 2013). What has not really been considered in extant research is, however, what actions this integration encompasses. E.ON's case shows that the integrative approach may comprise a range of actions, which can also imply adopting specific value-practice combinations in different fields. Also, sustainability scholars have given limited attention to whether and to what extent a response integrating all SD sub-logics and practices is viable for a firm both from a strategic and from a legitimacy perspective. The strategic change trajectory may indeed encompass an intermediary period, where both existing and new practices are adopted by the firm, that associates them with multiple SD-related demands. This stage can last a shorter or longer period of time, yet it is important to consider the possibility, overlooked in the literature but signaled by E.ON's case, that this response may not be viable in the long term.

### 5.5.3. Third stage

As the external transformations' impact reaches its peak, the firm undertakes a more radical strategic change, where it abandons the existing practices and focuses on the growth of new ones. This major strategic change is likely to encompass the innovation of the firm's business model. Concurrently to strategic changes the firm addresses SD-related institutional complexity by abandoning the adoption of multiple SD values and associated practices and focusing on specific ones. The adoption of a more radical strategic change with respect to a firm's traditional practices, leads, on one side, to the

change of the SD sub-logic prioritized by the firm and also to a continued innovation, which started before, of the type of the practices associated with the new dominant SD sub-logic. More specifically, the responses adopted by the firm in this stage may be threefold.

The first response consists of *compartmentalizing SD sub-logics and associated practices*. Although it is possible for a firm to immediately abandon a set of practices and the fulfilment of specific SD-related values, the exit can be preceded by an intermediary stage in which the company gathers the activities, driven by the logic it intends to abandon, in a new, separate, entity. While institutionalists have seen (identity) compartmentalization mainly as a mere symbolic initiative (Kraatz and Block, 2008) and 'as a form of decoupling' (Greenwood et al., 2011), we argue that, if this response is a step in a process of withdrawal, it acquires a substantive nature. For this reason, a longitudinal analysis of firms' responses to institutional complexity is particularly relevant, in order to have a deeper understanding of the rationale related to a certain action.

The second, key response entails *exiting* the SD sub-logics that were historically considered the core driver of the firm's action and the practices which it has traditionally associated with these logics. This response to institutional complexity is adopted by organizations, according to Purdy and Gray (2009: 369), when they "abandon[..] the institutional field that they initially tried to influence to align with another". Here we instead posit that exit can occur also within an organizational field, when a firm abandons not the field itself but one or more logics driving it. In particular, when a firm acknowledges that responding simultaneously to multiple SD-related logics risks to hinder its legitimacy and/or is not consistent with its new strategic renewal, it may decide to cease to fulfil the logic(s) which threaten more its legitimacy and that are more incompatible with its strategic direction.

The third response, symmetrical to the second one, is *focusing*, which consists in the firm's decision to concentrate its efforts on of the new SD sub-logic. Aiming to conform to this SD sub-logic, the company, on one side, expands existing practices associated with it and, on the other side, it starts adopting new practices which fulfil it.

## 5.6. CONCLUSIONS AND IMPLICATIONS

In the last decade, a number of industries have faced radical transformation due to several concurrent "technological, socio-economic and regulatory changes" (Zúñiga-Vicente and Vicente-Lorente, 2006: 486). These shifts, very notable for the electricity sector on which this study focused, have been intertwined with the rising relevance and number of sustainability demands firms had to address. Thus firms have had, on

one side, to change and adapt their strategies to the new competitive situation and, on the other side, to address sustainability issues and concerns related to their practices. The response to sustainability demands has often been particularly challenging given their heterogeneity and, in some cases, conflicting features. Within this turbulent framework firms have had to face multiple, concurrent and heterogeneous SD-related institutional pressures, and this study aimed to help shed more light on firms' responses in this situation. The findings from E.ON case allowed to develop a process model of firms' responses to SD-related institutional complexity during strategy change due to external transformations. In this way, our study contributes to both the corporate sustainability and the institutional complexity literature.

A dynamic and multifaceted view of firms' responses to SD-related issues emerges, which provides a different perspective both from the win-win paradigm to sustainability that has been dominant until recently and from the integrative approach to SD-related tensions developed in the last years. Indeed, our model suggests that a win-win outcome between multiple sustainability issues is very difficult to attain, due to the heterogeneity of SD-related values to fulfil and to the contestation of the practices to be associated with each value. Also, it signals that an approach which embraces the tensions risks may not be viable in the longer term, due to legitimacy and/or strategic reasons. A firm thus may go through different types of responses over time, of which an integrative response represent only a stage in the process.

The model also contributes to advancing knowledge in institutional complexity. In particular, it indicates that firms do not always adopt a 'single' and 'sustainable' response to institutional complexity. Instead they can adopt different responses at the same time and certain responses may be pertinent only in the short term and not viable in the medium or longer run in the face of multiple transformations that disrupt the structure of the industry in which they operate and the prevailing business models. In this context, a firm's response to institutional complexity risks to be unstable and destined to vary over time.

In addition, our study can be considered a first empirical attempt to employ a SD logic that has been conceptualized by integrating the corporate sustainability and institutional logics literature. Based on its application to E.ON's case, we argue that this logic provides a valuable lens to explore sustainability-related tensions and dynamics and to examine how firms respond to them. Indeed, the distinction between SD-related beliefs and material practices and the integration of features like independence and interdependence of sustainability allows an in-depth analysis of the sources of tensions between sustainability issues, the specific way firms respond to

sustainability demands and how being 'sustainable' can mean different things for a firm over time.

Some policy implications can be drawn from the study. The E.ON case shows that, based on strategic evaluations, firms can decide to abandon key responsibilities they have towards the society and the environment. The fact that E.ON decided to assign the key duty of security of supply to an independent company destined to be divested present risks for the entire electricity system. It is thus necessary for policy-makers to quickly identify and address the changes firms decide to undertake as regards their role in the society.

Beside the contributions, our study also has limitations. First, the adoption of a single case study design, although considered valuable and pertinent in management literature, limits the possibility to generalize the findings. Future studies could compare the responses of firms facing the same environmental transformations in order to assess the use of the different approaches to SD-related institutional complexity and their viability for different organizations.

Second, the study focused on E.ON's point of view by collecting a range of documents released on their corporate website. Interestingly, while in chapter 4 E.ON emerged as a rather vocal company as regards keeping nuclear energy in Germany, this does not emerge as strongly from the data collected in this study. One of the reasons might be that the focus was on the press releases published on E.ON's corporate website and not its German website; yet the corporate website included a relevant number of press releases focusing on Germany. Another reason may be that, while nuclear energy was mentioned by E.ON in the documents collected, it was not always connected to SD sub-logics, and for this reason it was not coded. We deem that future research could address this mismatch by collecting data from more and different sources.

Third, our study focused on the relationships between SD sub-logics, overlooking the presence of other logics with which the SD logics interact. Yet, this inter-institutional complexity was signalled clearly by E.ON's statements. Particularly interesting was the use, by E.ON, of SD sub-logics, in some cases, to criticize the German or EU regulators' interventions in the energy sector and to support a market-driven coordination, while, in other cases, to call for the need of public support mechanisms. We thus consider that a promising focus of future studies could consist in exploring the interaction between the SD logic with other institutional logics among the ones identified by Friedland and Alford (1991). In keeping with this, in chapter 6 we will explore the interaction between the SD logics and the market and state logics.